PROGRAM-RELATED FATALITIES

MICHIGAN 2006

Management Information Systems Section
Management and Technical Services Division
Michigan Department of Labor
& Economic Growth
September 2007

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INTRODUCTION

In 2006, Michigan reported 52 Program-Related fatalities. Program-Related fatalities in Michigan are recorded and tabulated by the Management Information Systems Section, Michigan Occupational Safety and Health Administration (MIOSHA), Michigan Department of Labor and Economic Growth. The sources of data include the Basic Report of Injury - Form 100 and telephone reports of fatalities to MIOSHA. The conditions necessary for a fatal case to be Program-Related are defined in the NOTE ON PROGRAM RELATED CASES (see Page 8).

The intention of this report is to promote an understanding of what constitutes a Program-Related fatality and to assist in the continued effort of preventing and reducing fatal cases. Information presented in this report may be of special interest to employers, employees, safety professionals and consultants. Any inquiries regarding this report may be addressed to:

Management Information Systems Section
Management and Technical Services Division
Michigan Occupational Safety and Health Administration (MIOSHA)
Michigan Department of Labor & Economic Growth
7150 Harris Drive, Box 30643
Lansing, Michigan 48909-8143
Telephone (517) 322-1851

HIGHLIGHTS OF PROGRAM-RELATED FATALITIES, MICHIGAN 2006

This Program-Related fatality information for Michigan was compiled from the "Employers Basic Report of Injury," Workers Disability Form 100s, and from direct telephone reports of fatalities to MIOSHA. Only fatal cases that are Program-Related, as defined by MIOSHA, are compiled. Therefore, the data does not include fatalities resulting from heart attacks, homicides, suicides, personal motor vehicle accidents, and aircraft accidents. The figures are shown in **Tables 1 through 12**.

PROGRAM-RELATED FATALITY TRENDS

A definition of Program-Related cases can be found on Page 8 of this report. Program-Related fatality trends for 1985 through 2006 are shown in **Table 1**, as well as **Figure 1**.

This report is an overview of how the fatalities were distributed across industry groups, occupations, sources of injury or illness, events or exposures, parts of body affected, and nature of injury or illness. Frequencies of fatalities by age group, gender, month of occurrence, and counties of occurrence are also provided.

PROGRAM-RELATED FATALITIES BY INDUSTRY

Table 2 shows the distribution of Program-Related fatalities by industry groups in 2006. This was determined by the job being performed by the employee at the time of the accident. Beginning in 2003, the industry group category is based on the Northern American Industry Classification System (NAICS), which groups establishments into industries based on the activities in which they are primarily engaged. Prior to 2003, the industry group category was based on the Standard Industrial Classification (SIC) of the employer. Due to the substantial differences between the current and previous classification system, the results by industry in 2003 and thereafter constitute a break in series and users are advised against making comparisons between the 2003 industry categories and the results for previous years.

During 2006, the largest number of Program-Related fatalities was reported in the Construction industry (NAICS 23) with 27 fatalities.

PROGRAM-RELATED FATALITIES BY OCCUPATION

Program-Related fatalities by occupation are shown in **Table 3**. The most affected occupation group with 19 Program-Related fatalities was Construction and Extraction followed by Transportation and Material Moving with nine fatalities. These were followed by Production occupations, as well as Installation, Maintenance and Repair occupations each reporting seven fatalities.

PROGRAM-RELATED FATALITIES BY SOURCE OF INJURY OR ILLNESS

The sources of injury or illness leading to Program-Related fatalities during 2006 are listed in **Table 4**. Thirteen fatalities were reported for the category of Floors, Walkways, Ground Surfaces; seven were reported for Parts and Materials; and six fatalities were reported for the categories of Persons, Plants, Animals and Minerals, as well as Highway Vehicle, Motorized. All other sources contributed four or fewer fatalities.

PROGRAM-RELATED FATALITIES BY EVENT OR EXPOSURE

Table 5 shows Program-Related fatalities by event or exposure. Of these, 12 victims Fell to a Lower Level and 12 were Struck by an Object. Six fatalities were the result of coming in Contact with Electric Current.

PROGRAM-RELATED FATALITIES BY PART OF BODY

Parts of the body affected by fatal injury or illness are shown in **Table 6.** The data shows that Cranial Region, including Skull, accounted for 19 fatalities. Multiple Body Parts accounted for 17 fatalities and nine fatal injuries or illnesses were specified for Body Systems.

PROGRAM-RELATED FATALITIES BY NATURE OF INJURY OR ILLNESS

Details of the nature of injuries and illnesses causing Program-Related fatalities are given in **Table 7**. The nature of the fatal injuries or illnesses reported Multiple Intracranial Injuries accounting for 17 fatalities. Intracranial Injuries and Injuries to Internal Organs, as well as Other Combinations of Traumatic Injuries and Disorders each reported eight fatalities. Electrocutions, Electric Shocks accounted for six fatalities. These categories accounted for approximately 25 percent of the total program-related fatalities that occurred in 2006.

PROGRAM-RELATED FATALITIES BY AGE AND GENDER

The distribution of Program-Related fatalities by age and gender are shown in **Tables 8 and 9**. The age groups of 46-50 and 56-60 suffered the greatest numbers of fatalities reporting eight each. These were followed by the five-year age categories of 26-30 and 41-45 each reporting seven fatalities and the age group of 31-35 reporting six fatalities. Of the 52 victims, all 52 were male employees.

PROGRAM-RELATED FATALITIES BY MONTH OF OCCURRENCE

Fatality data categorized by the month of occurrence is shown in **Table 10**. The month of August recorded the highest number of fatalities with 11. Seven Program-Related fatalities were reported during the month of February, while the months of May and December each recorded six fatalities. The months of April and October recorded five fatalities each.

PROGRAM-RELATED FATALITIES BY INDUSTRY GROUPS AND DAYS OF THE WEEK

Program-Related fatalities by industry groups and days of the week are shown in **Table 11**. The highest number of fatalities by day of the week shows Wednesday with 14; followed by Monday with nine; Thursday with eight; Tuesday and Friday with seven; Sunday with six; and Saturday with one Program-Related fatality.

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PROGRAM-RELATED FATALITIES BY COUNTY OF OCCURRENCE

The distribution of fatality cases by counties shows that Program-Related fatalities were reported as occurring in 23 counties during 2006. Eight fatalities were reported in Macomb County; seven were reported in Oakland and Wayne counties; four fatalities in Kent County; and three fatalities in Genesee County. A complete distribution of fatality cases by county of occurrence is shown in **Table 12**.

Even though Michigan's 2006 total Program-Related fatality cases are far less than the thousands of cases reported nationwide, the consequences of these on-the-job deaths in terms of human suffering, lost workdays, decreased production, and increased compensation rates are all too significant to be overlooked.

In order for Michigan to reduce the number of on-the-job fatality cases, it requires a conscious effort on the part of employers to recognize and comply with MIOSHA standards, develop and implement safe working procedures and assure that employees observe and practice these procedures. The MIOSHA program offers on-site consultation and consultation, education and training (CET) opportunities to employers and employees alike to help them achieve this goal.

Those Michigan employers, who would like to request education and training services, as well as onsite consultation programs, may contact:

Michigan Occupational Safety and Health Administration (MIOSHA)
Consultation Education and Training (CET) Division
Michigan Department of Labor & Economic Growth
Box 30643, Lansing, Michigan 48909
Telephone (517) 322-1809

The Program-Related fatality data for Michigan are presented in the following series of **Tables 1 through 12**. A brief description of how the Program-Related fatalities occurred is also provided following the series of tables. The descriptions are listed by industry groups based on the North American Industry Classification System (NAICS), which is based on the activity in which the establishment is primary engaged. Safety professionals may find this information useful for accident prevention.

NOTE ON PROGRAM-RELATED CASES

A fatality is recorded as “Program-Related” if the deceased party was employed in an occupation included in MIOSHA jurisdiction as defined in Public Act 154 of 1974, as amended, and the fatality appears to be related to one or more of the following conditions:

1. The incident was found to have resulted from violations of MIOSHA safety and health standards or the “general duty” clause.

2. The incident was considered to be the result of a failure to follow a good safety and health practice that would be the subject of a safety and health recommendation.

3. The information describing the incident is insufficient to make a clear distinction between a "Program-Related" and "non-Program-Related" incident, but the type and nature of the injury indicates that there is a high probability that the injury was the result of a failure to adhere to one or more MIOSHA standards, the “general duty” clause, or good safety and health practice.

Any inquiries may be addressed to:

MANAGEMENT INFORMATION SYSTEMS SECTION
MANAGEMENT AND TECHNICAL SERVICES DIVISION
MICHIGAN OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (MIOSHA)
MICHIGAN DEPARTMENT OF LABOR & ECONOMIC GROWTH
7150 HARRIS DRIVE, BOX 30643
LANSING, MICHIGAN 48909-8143
(517) 322-1851

FIGURE 1
PROGRAM-RELATED FATALITY TRENDS
MICHIGAN 1985-2006

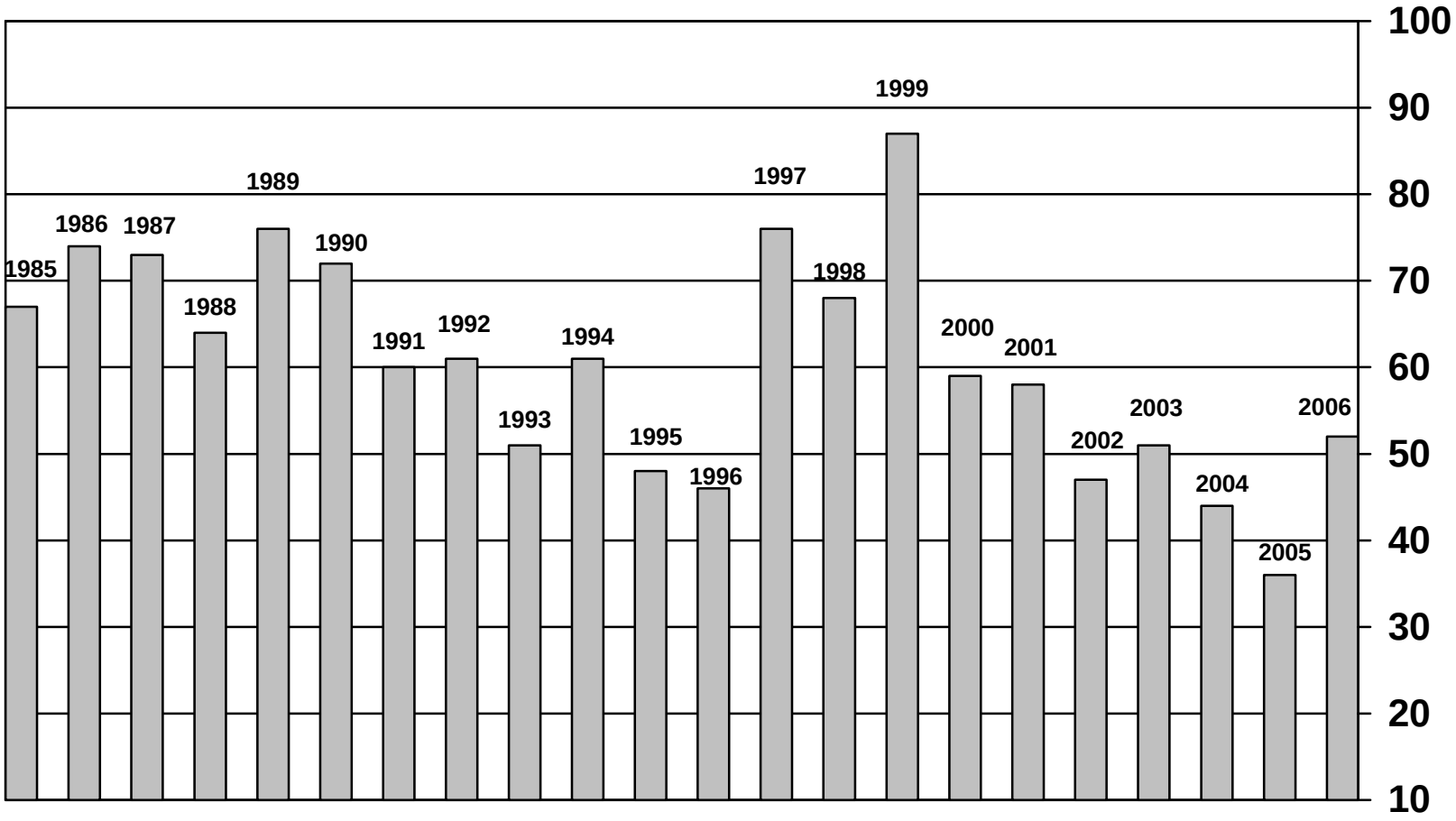

TABLE 1

PROGRAM-RELATED FATALITY TRENDS
MICHIGAN 1985 – 2006

YEAR	NUMBER	PERCENT CHANGE FROM PREVIOUS YEAR	PERCENT CHANGE FROM 1985
1985	67	--	--
1986	74	10.4	10.4
1987	73	-1.4	9.0
1988	64	-12.4	-4.5
1989	76	18.8	13.4
1990	72	-5.3	7.5
1991	60	-16.7	-10.4
1992	61	1.7	-9.0
1993	51	-16.4	-23.9
1994	61	19.6	-9.0
1995	48	-21.4	-28.4
1996	46	-4.2	-31.3
1997	76	65.2	13.4
1998	68	-10.5	1.5
1999	87	27.9	29.9
2000	59	-32.2	-11.9
2001	58	-1.7	-13.4
2002	47	-19.0	-29.9
2003	51	8.5	-23.9
2004	44	-13.7	-34.3
2005	36	-18.2	-46.3
2006	52	44.4	-22.4

Source: MISS/MTSD/ MIOSHA/Michigan Department of Labor & Economic Growth

TABLE 2

PROGRAM-RELATED FATALITIES
BY INDUSTRY GROUPS
MICHIGAN 2006

NAICS MAJOR SECTOR	INDUSTRY GROUP	TOTAL
11	AGRICULTURE, FORESTRY, FISHING AND HUNTING	1
21	MINING	0
22	UTILITIES	0
23	CONSTRUCTION	27
31-33	MANUFACTURING	12
42	WHOLESALE TRADE	1
44-45	RETAIL TRADE	2
48-49	TRANSPORTATION AND WAREHOUSING	3
51	INFORMATION	0
52	FINANCE AND INSURANCE	0
53	REAL ESTATE AND RENTAL AND LEASING	0
54	PROFESSIONAL, SCIENTIFIC AND TECHNICAL SERVICES	0
55	MANAGEMENT OF COMPANIES AND ENTERPRISES	0
56	ADMINISTRATIVE AND SUPPORT AND WASTE MANAGEMENT AND REMEDIATION SERVICES	4
61	EDUCATIONAL SERVICES	0
62	HEALTH CARE AND SOCIAL ASSISTANCE	0
71	ARTS, ENTERTAINMENT AND RECREATION	1
72	ACCOMMODATION AND FOOD SERVICES	0
81	OTHER SERVICES (EXCEPT PUBLIC ADMINISTRATION)	1
92	PUBLIC ADMINISTRATION	0
TOTAL		**52**

Note: The industry group categories are based on the Northern American Industrial Classification System (NAICS), which is based on the activities in which the establishments are primarily engaged.

Source: MISS/MTSD/ MIOSHA/Michigan Department of Labor & Economic Growth

TABLE 3

PROGRAM-RELATED FATALITIES
BY OCCUPATION
MICHIGAN 2006

STANDARD OCCUPATION CODE	OCCUPATION	NUMBER OF CASES 2006
11-0000	MANAGEMENT	1
37-0000	BUILDING AND GROUNDS CLEANING AND MAINTENANCE	6
39-0000	PERSONAL CARE AND SERVICE OPERATIONS	1
41-0000	SALES AND RELATED OCCUPATIONS	1
45-0000	FARMING, FISHING AND FORESTRY	1
47-0000	CONSTRUCTION AND EXTRACTION	19
49-0000	INSTALLATION, MAINTENANCE AND REPAIR	7
51-0000	PRODUCTION	7
53-0000	TRANSPORTATION AND MATERIAL MOVING	9
TOTAL		**52**

Note: Occupations are based on the Standard Occupational Classification (SOC) coding manual.

Source: MISS/MTSD/MIOSHA/Michigan Department of Labor & Economic Growth

TABLE 4

PROGRAM-RELATED FATALITIES BY SOURCE OF INJURY OR ILLNESS MICHIGAN 2006

SOURCE OF INJURY OR ILLNESS	NUMBER OF CASES 2006
CHEMICALS AND CHEMICAL PRODUCTS	1
CONTAINERS	2
CONSTRUCTION, LOGGING, AND MINING MACHINERY	4
HEATING, COOLING AND CLEANING MACHINERY AND APPLIANCES	1
MATERIAL HANDLING MACHINERY	2
METAL, WOODWORKING AND SPECIAL MACHINERY	2
PARTS AND MATERIALS	7
PERSONS, PLANTS, ANIMALS AND MINERALS	6
FLOORS, WALKWAYS, GROUND SURFACES	13
OTHER STRUCTURAL ELEMENTS	1
STRUCTURES	1
TOOLS, INSTRUMENTS AND EQUIPMENT	2
HIGHWAY VEHICLE, MOTORIZED	6
OFFROAD VEHICLE, NONINDUSTRIAL	1
PLANT AND INDUSTRIAL POWERED VEHICLES, TRACTORS	3
TOTAL	**52**

Source: MISS/MTSD/MIOSHA/Michigan Department of Labor & Economic Growth

TABLE 5

PROGRAM-RELATED FATALITIES
BY EVENT OR EXPOSURE
MICHIGAN 2006

EVENT OR EXPOSURE	NUMBER OF CASES 2006
STRUCK BY OBJECT	12
CAUGHT IN OR COMPRESSED BY EQUIPMENT OR OBJECTS	4
CAUGHT IN OR CRUSHED IN COLLAPSING MATERIALS	4
FALL TO LOWER LEVEL	12
CONTACT WITH ELECTRIC CURRENT	6
NON-HIGHWAY ACCIDENT, EXCEPT RAIL, AIR, WATER	4
PEDESTRIAN, NONPASSENGER STRUCK BY VEHICLE, MOBILE EQUIPMENT	5
EXPOSURE TO HARMFUL SUBSTANCES OR ENVIRONMENT	1
EXPLOSION	4
TOTAL	**52**

Source: MISS/MTSD/MIOSHA/Michigan Department of Labor & Economic Growth

TABLE 6

PROGRAM-RELATED FATALITIES
BY PARTS OF BODY AFFECTED
MICHIGAN 2006

PARTS OF BODY AFFECTED	NUMBER OF CASES 2006
CRANIAL REGION, INCLUDING SKULL	19
NECK	1
CHEST, INCLUDING RIBS, INTERNAL ORGANS	2
TRUNK	3
MULTIPLE TRUNK LOCATIONS	1
BODY SYSTEMS	9
MULTIPLE BODY PARTS	17
TOTAL	**52**

Source: MISS/MTSD/MIOSHA/ Michigan Department of Labor & Economic Growth

TABLE 7

PROGRAM-RELATED FATALITIES
BY NATURE OF INJURY OR ILLNESS
MICHIGAN 2006

NATURE OF INJURY OR ILLNESS	NUMBER OF CASES 2006	
TRAUMATIC INJURIES TO BONES, NERVES, SPINAL CORD	1	
INTRACRANIAL INJURIES	2	
MULTIPLE INTRACRANIAL INJURIES	17	
MULTIPLE TRAUMATIC INJURIES AND DISORDERS	1	
INTRACRANIAL INJURIES AND INJURIES TO INTERNAL ORGANS	8	
OTHER COMBINATIONS OF TRAUMATIC INJURIES AND DISORDERS	8	
ASPHYXIATIONS/STRANGULATIONS, SUFFOCATIONS		3
ELECTROCUTIONS, ELECTRIC SHOCKS	6	
INTERNAL INJURIES TO ORGANS AND BLOOD VESSELS OF THE TRUNK		5
OTHER POISONINGS AND TOXIC EFFECTS	1	
TOTAL	**52**	

Source: MISS/MTSD/MIOSHA/Michigan Department of Labor & Economic Growth

TABLE 8

PROGRAM-RELATED FATALITIES BY AGE
MICHIGAN 2006

AGE	NUMBER OF CASES 2006	PERCENT OF CASES
20 and Under	0	0
21 - 25	5	10
26 - 30	7	13
31 - 35	6	12
36 - 40	5	10
41 - 45	7	13
46 - 50	8	15
51 - 55	5	10
56 - 60	8	15
61 and Over	1	2
TOTAL	**52**	**100**

Source: MISS/MTSD/MIOSHA/Michigan Department of Labor & Economic Growth

TABLE 9

PROGRAM-RELATED FATALITIES BY GENDER
MICHIGAN 2006

GENDER	NUMBER OF CASES 2006
MALE	52
FEMALE	0
TOTAL	**52**

Source: MISS/MTSD/MIOSHA/Michigan Department of Labor & Economic Growth

TABLE 10

PROGRAM-RELATED FATALITIES
BY MONTH OF OCCURRENCE
MICHIGAN 2006

MONTH OF OCCURRENCE	NUMBER OF CASES 2006
JANUARY	1
FEBRUARY	7
MARCH	1
APRIL	5
MAY	6
JUNE	2
JULY	2
AUGUST	11
SEPTEMBER	3
OCTOBER	5
NOVEMBER	3
DECEMBER	6
TOTAL	**52**

Source: MISS/MTSD/MIOSHA/Michigan Department of Labor & Economic Growth

TABLE 11

PROGRAM-RELATED FATALITIES
BY INDUSTRY GROUPS AND DAY OF THE WEEK
MICHIGAN 2006

INDUSTRY GROUP	DAY OF THE WEEK							
	SUN	**MON**	**TUE**	**WED**	**THUR**	**FRI**	**SAT**	**TOTAL**
AGRICULTURE, FORESTY, FISHING & HUNTING	0	0	1	0	0	0	0	**1**
CONSTRUCTION	2	5	3	7	5	5	0	**27**
MANUFACTURING	0	4	2	3	2	1	0	**12**
WHOLESALE TRADE	1	0	0	0	0	0	0	**1**
RETAIL TRADE	0	0	1	0	0	0	1	**2**
TRANSPORTATION & WAREHOUSING	1	0	0	2	0	0	0	**3**
ADMIN. & SUPPORT & WASTE MGMT. & REMEDIATION SERV.	0	0	0	2	0	1	1	**4**
ARTS, ENTERTAINMENT, & RECREATION	1	0	0	0	0	0	0	**1**
OTHER SERVICES, EXCEPT PUBLIC ADMINISTRATION	0	0	0	0	1	0	0	**1**
TOTAL	**5**	**9**	**7**	**14**	**8**	**7**	**2**	**52**

Source: MISS/MTSD/MIOSHA/Michigan Department of Labor & Economic Growth

TABLE 12

PROGRAM-RELATED FATALITIES BY COUNTY OF OCCURRENCE MICHIGAN 2006

COUNTY	NUMBER OF CASES
ALLEGAN	2
BERRIEN	2
CALHOUN	1
CASS	2
DELTA	1
DICKINSON	1
GENESEE	3
GRAND TRAVERSE	1
HOUGHTON	1
HURON	1
JACKSON	1
KENT	4
MACKINAC	1
MACOMB	8
MANISTEE	1
MIDLAND	2
OAKLAND	7
ONTONAGON	1
ST. CLAIR	1
ST. JOSEPH	1
SANILAC	1
WASHTENAW	2
WAYNE	7
TOTALS	**52**

Source: MISS/MTSD/MIOSHA/Michigan Department of Labor & Economic Growth

PROGRAM-RELATED FATALITY INCIDENTS
BRIEF DESCRIPTIONS OF CASES BY INDUSTRY GROUPS

AGRICULTURE, FORESTRY, FISHING AND HUNTING:

1. Victim was working in an 80-acre clear cut area by himself. His primary job function was that of a mechanical harvester operator. At some point, he attempted to fell a tree with a chain saw and in doing so lodged the tree into another standing tree. While working on another felled tree that was already on the ground, the lodged tree became dislodged, falling and striking the victim.

   Violations noted:

   Logging

CONSTRUCTION:

2. Employee was in 2-feet wide by 9-feet, 6-inch deep excavation adjacent to a basement foundation wall. He was attempting to identify a source of water leakage into the basement when the side of the excavation caved in, trapping the worker at the base of the excavation.

   Violations noted:
   General Rules
   Excavation, Trenching and Shoring

3. Employee was delivering roofing materials when he fell through a skylight to the concrete floor 20 feet below. Employee died as a result of the fall.

   Violations noted:
   General Rules
   Fall Protection
   Recording and Reporting of Occupational Injuries and Illnesses

4. Victim was electrocuted when he made contact with an energized 7,000-volt electrical line.

   Violations noted:
   Scaffolds and Scaffold Platforms
   General Rules

5. While working in an excavation, the side wall collapsed.

   Violations noted:
   General Rules
   Excavation, Trenching and Shoring

6. Victim fell from a roof and stepped onto an unsecured deck panel.

   Violations noted:
   Scaffolds and Scaffold Platforms
   Steel Erection
   General Rules
   Aerial Work Platforms

CONSTRUCTION (Con't.):

7. While cleaning up debris from under a bridge being demolished, victim stepped into an active lane of traffic and was struck by a motor vehicle.

   Violations noted:
   - General Rules
   - Demolition
   - General Duty
   - Signals, Signs, Tags and Barricades

8. Employee was removing piping from an oil storage tank using a gas-powered saw. The product in the storage tank ignited and caused an explosion.

   Violations noted:
   - General Rules
   - Tools
   - Health Hazard Control for Specific Equipment and Operations for Construction
   - Hazard Communication

9. Victim was struck by a vehicle.

   Violations noted:
   - General Rules
   - Signals, Signs, Tags and Barricades

10. Employee energized an electrical panel to inspect security lighting circuit. This back fed a transformer and energized the bus bars on the exterior structure to 7200kv. The employee then climbed onto the structure and contacted a bus bar, receiving an electrical shock and fell 15 feet to the ground below.

    Violations noted:
    - General Duty
    - General Rules
    - Power Transmission and Distribution

11. Employee was walking along the path of an asphalt milling machine operation to measure depth of the cut and related work when a dump truck backed up to load milled material. Employee was struck by and then ran over by the truck backing up.

    Violations noted:
    - General Rules

12. Employee was installing siding from a scaffold and ladder on a roof. The roof jack anchors pulled and collapsed. The employee slid down and off the roof edge 12-feet to the asphalt driveway below striking his head.

    Violations noted:
    - Powered Industrial Trucks
    - General Rules
    - Fixed and Portable Ladders
    - Fall Protection
    - Scaffolds and Scaffold Platforms

CONSTRUCTION (Con't.):

13. Employees were on a house roof performing carpentry operations. As they were sweeping and picking up debris, the victim stepped backwards and fell off the roof's edge.

    Violations noted:
    - General Rules
    - Fall Protection

14. While working from a cell phone tower, victim fell 120 feet to the ground.

    Violations noted:

    - Telecommunications

15. Employees were using an 8-foot step ladder on a rough terrain fork truck platform to gain additional reach when victim fell from the platform to the ground 30 feet below. Employee was installing leaf guard on rain gutters.

    Violations noted:

    - Scaffolds and Scaffold Platforms

16. Employees were installing approximately 70-foot long trusses without proper temporary bracing when the trusses fell along with employees.

    Violations noted:

    - General Duty
    - General Provisions

17. Employee fell from a 10/10 pitch roof while performing roofing operations.

    Violations noted:

    - Fall Protection
    - General Duty

18. Employee was on a job site to install control wiring for the main electrical switch gear. Prior to the electrical power being shut down, the employee opened the door to the switch gear and came in contact with high voltage inside of the equipment.

    Violations noted:

    - General Rules
    - Personal Protective Equipment
    - Electrical Installations

CONSTRUCTION (Con't.):

19. Employees were installing water service in a 9 feet deep excavation when the south side of the excavation caved in burying one of the employees.

    Violations noted:

    Personal Protective Equipment
    Excavation, Trenching and Shoring

20. Employee was installing blocks weighing 53 to 80 pounds each when one was picked up by a gust of wind and struck him in the face.

    Violations noted:

    None

21. While removing a pipe cap from an 8-inch line that was pressurized with 80 pounds of air, an employee was struck by the metal pipe cap blown off the end of the pipe.

    Violations noted:

    General Rules

22. Employee was operating a roller-compactor in site preparation activities when the machine rolled over on the slope at the edge of the sand backfill. The roller-compactor rolled on its side and landed on top of the employee, crushing him.

    Violations noted:

    General Rules

23. Employee was operating a vibratory plow installing an underground primary power cable 36 inches below the surface. The equipment struck and ruptured a 24-inch natural gas high pressure pipe line resulting in an explosive action, throwing dirt 80 feet into the air.

    Violations noted:

    General Rules
    Excavation, Trenching and Shoring

24. Employee was operating backhoe moving debris when the victim jumped up on the tracks, reached into the cab and inadvertently activated the boom and was crushed.

    Violations noted:

    None

25. Employee was installing ductwork from mobile scaffold 5 feet high when he fell from the platform to the concrete floor below, striking his head on the floor.

    Violations noted:

    General Duty

CONSTRUCTION (Con't.):

26. The employee was felling a tree when the tree fell, landing on him.

    Violations noted:

        Tree Trimming and Removal

27. A skid steer loader had developed a hydraulic leak. The operator of the machine elevated the operator cab of the loader and positioned himself between the cab and the machine. The cab fell and pinned the victim in the machine.

    Violations noted:

        General Rules

28. Employee died during a bathtub refinishing operation involving the use of a methylene chloride-containing chemical stripping.

    Violations noted:

        Methylene Chloride
        General Duty

MANUFACTURING:

29. Employee was helping unload a truck with conveyor components on it when a section of the conveyor fell off the truck, crushing the employee.

    Violations noted:

        None

30. The employee was operating a powered industrial truck. It appears that the forklift was driven off the dock while traveling in reverse. Employee was found pinned face down under the overhead guard.

    Violations noted:

        Powered Industrial Trucks

31. A foundry worker was caught between two (2) flasks. His job function was to be a hooker for an overhead cab crane. On the date of the accident, he was struck by the top half of a flask weighing approximately 12,000 pounds. The flask was hooked to a moving overhead cab crane. He was caught between this flask and an adjacent flask resulting in a crushing injury.

    Violations noted:

        Overhead and Gantry Cranes

MANUFACTURING (Con't.):

32. Two employees were assigned to repair or replace the cushion on a press. The employees were using a piece of plywood on top of a conveyor to reach another piece of plywood placed on a ladder to reach the cushion. Employee was working approximately 10 to 15 feet above the floor when he fell from the plywood to the floor below.

    Violations noted:

    General Duty
    General Provisions
    Floor and Wall Openings, Stairways and Skylights

33. Victim was allowed to operate a powered industrial truck prior to training, testing, or being required to demonstrate his capabilities. During operation of the powered industrial truck, he was traveling with the forks fully extended upward when the forklift tipped over and he was crushed.

    Violations noted:

    Powered Industrial Trucks

34. Employee was on top of an overhead crane walkway to replace electrical covers or to check electrical panels that he had previously worked on. The power disconnect for the crane was not locked out and was found in the "on" position. The covers for the electrical panels were found on the walkway area, removed from the panels. Victim was found lying on the walkway after he had been electrocuted.

    Violations noted:

    Electrical Safety-Related Work Practices

35. Operator was driving a front-end loader moving gravel to be placed onto a stationary conveyor. He dismounted the front-end loader without engaging the parking brake and without lowering the bucket to the ground, and left the front-end loader in gear. He then walked between the bucket of the front-end loader and the stationary conveyor. The front-end loader rolled forward crushing the employee between the bucket and the conveyor.

    Violations noted:

    General Duty

36. The deceased was working alone in the yard of a building. He was discovered by another employee pinned between a hi-lo fork and a privately owned vehicle in the yard. It appeared that the hi-lo moved unexpectedly, pinning the deceased against the pick-up truck in the yard, causing death.

    Violations noted:

    Powered Industrial Trucks

MANUFACTURING (Con't.):

37. Employee was trying to remove a part with a pry bar when the swedger machine cycled and the pry bar stuck the employee in the head.

    Violations noted:

    General Provisions
    Lockout/Tagout

38. Employee was trying to get a puffer gun back online after a power outage. There was a build up of pressure and an explosion occurred.

    Violations noted:

    General Duty
    General Provisions

39. Three (3) employees were in the process of moving a die shoe with an overhead crane to be placed on a rail cart. During the process, one of the die corners struck a conveyor resulting in the die swinging at an employee, pinching him between the die and a rack of parallel spaces.

    Violations noted:

    Overhead and Gantry Cranes

40. Employee entered the cell of a robot to clean sensors that signal to robot that a part was ready to be removed. The employee did so without locking out robot or taking teach pendant with him.

    Violations noted:

    General Duty
    Powered Industrial Trucks
    Lockout/Tagout
    Recording and Reporting of Occupational Injuries and Illnesses

WHOLESALE TRADE:

41. A maintenance employee was assigned to perform maintenance on a hammer-mill shredder to replace the shredder blades. The shredder blades were over 9 feet long and weighed approximately 2,100 pounds each. He was assigned to be inside the hammer-mill to hook up a chain sling around the hammer blade so a truck crane could lift them out vertically. The blade would not lift out so he used a cutting torch to free it. While the blade was still under tension suspended by the crane, he cut all the way through the blade. The blade swung toward him, striking him in the head and chest and pushed him into the wall of the inside of the hammer-mill.

    Violations noted:

    Slings

RETAIL TRADE:

42. Employee was operating an order picker retrieving boxes of stock that were stored on warehouse racks up to approximately 15 feet above the floor. Employee fell from the platform at about 14 feet, 8 inches above the floor and was not utilizing a safety belt.

    Violations noted:

        Powered Industrial Trucks

43. Victim was assigned to a three-man crew to string Christmas lights in the trees at a local park. He was assigned ground work and was to connect power to the lights and place them on the trunk at heights accessible with a 12-foot step ladder. Employee had climbed from the step ladder into the tree and fell. Employee had received training on ladder use and fall protection.

    Violations noted:

        None

TRANSPORTATION AND WAREHOUSING:

44. An employee was trying to open the baggage cargo door and was struck by a mobile belt loader causing him to be crushed.

    Violations noted:

        None

45. Employee was assisting a truck driver from another firm with backing his vehicle into a receiving dock truck well. He was on the dock giving hand signals to the truck driver. At some point, an employee of the company saw the victim lying on the ground. Victim's head had been crushed by the trailer that was backing into receiving dock well.

    Violations noted:

        None

46. A truck driver, at a distribution center, was checking the air brake connection for a leak between the tractor and trailer when the tractor moved ahead. The tractor's dual wheels ran over him.

    Violations noted:

        None

ADMINISTRATIVE AND SUPPORT AND WASTE MANAGEMENT AND REMEDIATION SERVICES:

47. An employee was under a tree limb that was being cut. After the limb was cut, the rope that was holding it broke and the limb fell striking him on the head.

Violations noted:

Personal Protective Equipment
Tree Trimming and Removal
Recording and Reporting of Occupational Injuries and Illnesses
Inspections and Investigations, Citations and Proposed Penalties

48. Victim was in the process of conducting a tree trimming operation on residential property. While in the tree, he made contact with the overhead power lines rated at 4,800 volts. It had rained the night before and the pine trees were still wet.

Violations noted:

Personal Protective Equipment
Tree Trimming and Removal

49. The deceased was found lying on the ground by a passerby. A rain gutter and a portion of roof edge and a step ladder were noted by several witnesses at the scene after the discovery of the victim. Upon medical examination of the deceased, injuries were determined to be consistent with being struck in the head by the falling rain gutter. Victim fell to the ground causing secondary injuries. Victim had not been assigned to repair rain gutter, but had been assigned to work in the vicinity of rain gutter painting a nearby fence.

Violations noted:

None

50. The deceased was a tree trimmer working in a tree and was electrocuted after contacting a power line.

Violations noted:

None

ARTS, ENTERTAINMENT AND RECREATION:

51. Employee was preparing an amusement ride trailer for transportation. Part of his task was to re-attach the travel wheels onto the axles of the trailer. He was reaching into the wheel well of the trailer when the jack, supporting the weight of the trailer, broke through the boards under the jack on the soft ground. The jack then sank into the ground, trapping the employee's head between the wheel and tire assembly, causing the fatal injury.

Violations noted:

General Provisions
Recording and Reporting of Occupational Injuries and Illnesses

OTHER SERVICES, EXCEPT PUBLIC ADMINISTRATION:

52. Victim was performing welding inside of a four-compartment, bulk cargo tanker. During the welding process, flammable vapors ignited causing an explosion. The employee was killed as a result of multiple blunt force injuries sustained from the explosion.

Violations noted:

Confined Space Entry